

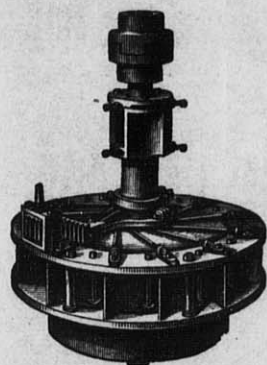
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40 La Salle Street.



MILWAUKEE OFFICE,
124 Grand Avenue.

Published by
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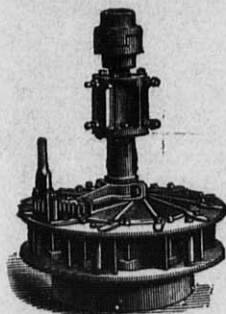
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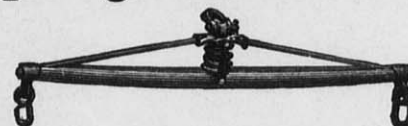
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Prolongs the Life of the Horse; Prevents Sore Shoulders, Stiffness of Limbs, Reluctance in Pulling and Destruction of Harness.

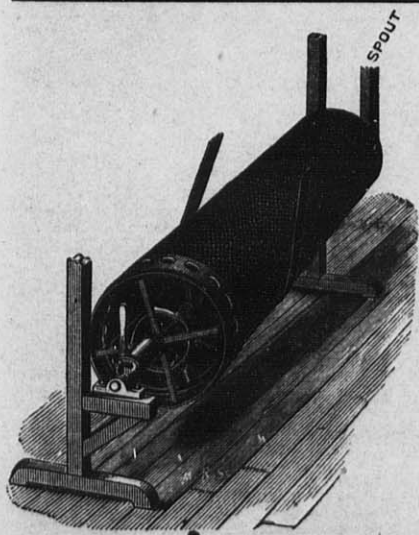
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[Jan. 89.]



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The Cockle Machine you sold us a year ago is doing its work as well now as it did in the start and has not cost us a dime for repairs yet.

Respectfully yours,

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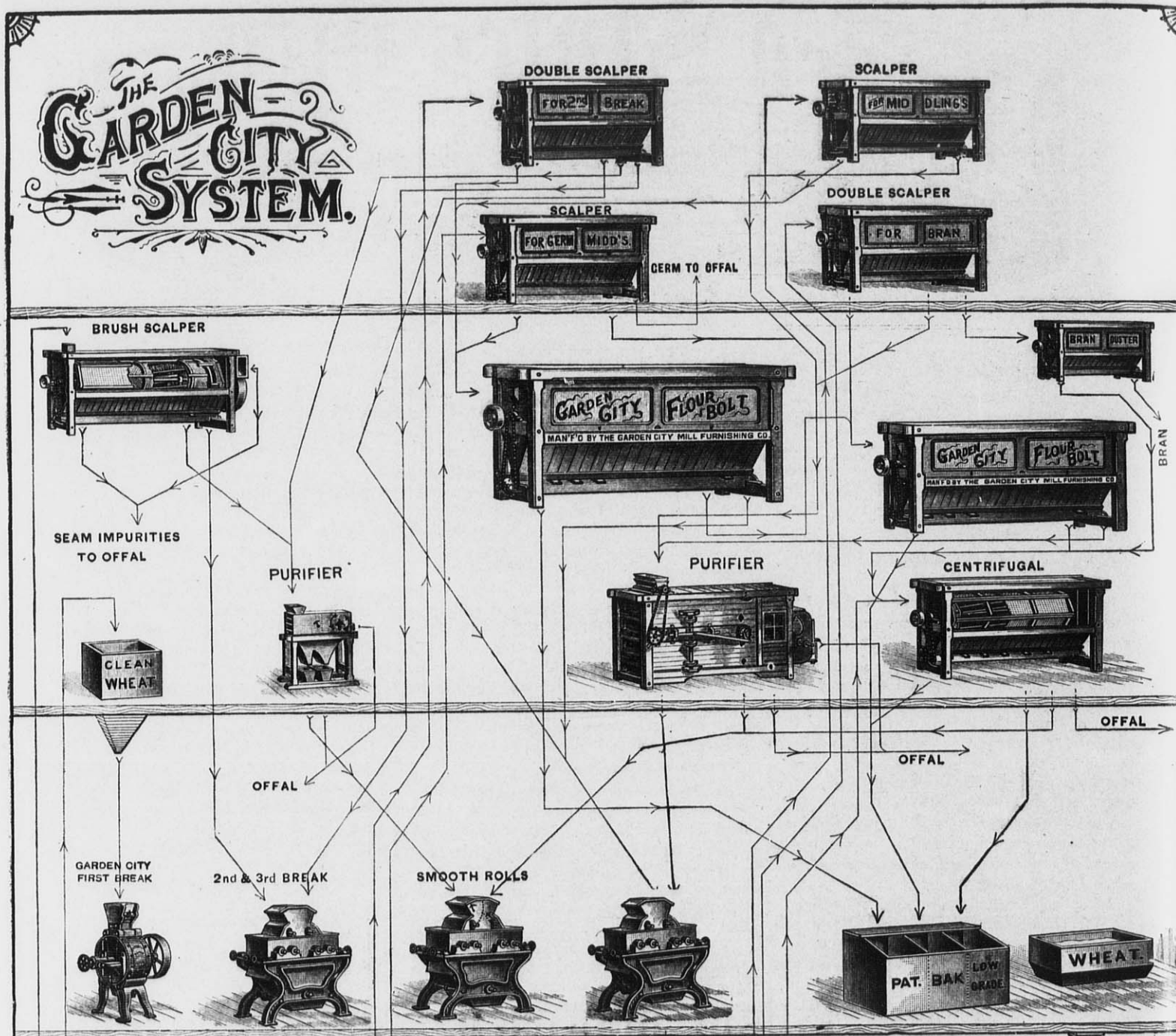


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We build the most perfect Mill in the country, after our own plans.

OR, We will build a Mill according to your own plans, if you prefer, and we will guarantee that the Mill will do as well as any other Mill on the same plan.

Our Machines are second to none, and better than most.

If our plan is adopted, we guarantee that it will do as well as any Mill; we make no exceptions.

Sometimes less money will buy a Single Machine, or an entire outfit less than we offer to sell at; but, we believe that quality should be considered with price, and when the former is taken into consideration, our prices will suit you.

Cut, illustrates the different Machines of our manufacture, besides our regular line of Wheat Cleaners—not illustrated.

We build every Machine that goes into a Flour Mill.

We also make up Bolting Cloths in a first-class manner.

Write for estimates, catalogues, etc.

GARDEN CITY MILL FURNISHING CO., CHICAGO, ILL.

P. S.—Several hundred Roller Mills, built by other manufacturers, have already been remodeled according to our plan with the best results.



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MILWAUKEE, NOVEMBER, 1888.

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Single Copies, 10 Cents.

OUR LONDON LETTER.

(From our own correspondent.)

The English Crop Returns—A Crooked Book-keeper in the British and Irish Millers' Association office—Milling Improvements—English Mill Fires—An Interview with Mr. Seth Taylor, the Great London Miller—Notes.

LONDON, November 3, 1888.

The month of October opened with the English markets decidedly strong, especially with breadstuffs, and with the advance of the "top price" English flour to 40s. per sack of 280 lbs. On the 8th the ordinary British and foreign flour met an improved enquiry. The advance in the price of wheat was kept until the middle of the month, when, on account of large arrivals from South Russia, and the rush of farmers in delivering English wheat on the market, prices gave all round, excepting the good white varieties from South Australia and California. However, last Monday and yesterday saw a great improvement in the tone of the market, and the decline in the middle of the month must now be considered as regained. American patent flour and the best English makes met a ready sale at Mark Lane market yesterday, and the prices for those sorts were higher than at any time during the month. For the future prices will advance a little and then decline during December, to be still higher than at present in January next.

A correspondent in "The Miller Weekly Market Issue," for October 22d, seems to find some fault with the opinion given by that paper as to this year's wheats. He says: "I send you a sample of our home grown wheats as they are coming in. * * I think you will agree with me that these are a fair sample. * * * Average yield 4½ qrs. of 504 lbs., some up to 6¼ qrs." The editor of that journal says that the wheat sent to him "is a fine parcel, and much above the average in condition and quality of this year's crop. We believe, however, that not one sample in forty of this season's English wheat sold on the Mark Lane Exchange has equaled that received from our correspondent."

The Tenth Annual Brewer's and Allied Trades' Exhibition was held during last week at the Agricultural Hall, Islington, N., which is the same site that was occupied in 1887 by the now famous English Miller's Exhibition that gave such impetus to the English milling trade. The exhibition this year was on a larger scale than any of its predecessors, the exhibitors numbering nearly 400, or 100 in excess of any previous year. There

were some excellent exhibits of machinery and appliances, and some fine displays, on an extensive scale, of malt, barley and other seeds. Some of the English milling engineers and mill furnishers exhibited their well-known specialties, although there was nothing very novel in flour-milling machinery; but I noticed that Messrs. E. R. & F. Turner, the manufacturers of Mr. J. Harrison Carter's Roller Mills, were exhibiting on their stand a double Roller Mill with two pairs of chilled-iron rolls 20 in. by 9 in. This Roller Mill, I was told, was for malt crushing, although it is very similar to, if not a copy of, those sold by Mr. Carter. Some of the visitors connected with the milling trade whom I met at this exhibition, and who had noticed this Roller Mill with the manufacturers' name on, were very anxious to know the rights of this new departure on the part of Messrs. E. R. & F. Turner.

The National Association of British and Irish Millers had a council meeting at their offices at Mark Lane yesterday afternoon, and from what I could gather from one of the millers at the meeting, the fund of that association only showed a balance of a little over £10 for the first six months, and it was estimated that at the end of the financial year, in April next, there would be a large deficit. The defalcations that have been discovered in the accounts will be made good either by the treasurer or secretary, most likely the latter, as he had his late book-keeper covered in an Assurance Co. The other subjects under discussion were the award of the prizes to the successful candidates of the late Millers' examination, and the date and the place of the next general meeting. This general meeting will take place in the early part of next month, when two or three millers will read papers on flour-milling.

Chas. Fred. Carden Noad is the name of the late book-keeper of the National Association of British and Irish Millers, who is the cause of the defalcations in the accounts of the Association, which amount to £24.9.0. Mr. Chatterton, who has himself a large business, is, however, the greatest sufferer by the absconding of his book-keeper, the defalcations and forgeries, as shown by his books which he has had examined by some first-class accountants, amounting to £700.

The well-known millers, Messrs. J. & H. Robinson, of Deptford Bridge Mills, Greenwich, who were the defendants in the now famous "germ case," which has been quoted many times in law since, have recently added to their mills, on the canal side, a fine building some nine stories high, which is fitted up

on the most improved silo or bin system. The building contains 23 bins, together having a capacity of 2,200 to 2,500 qrs. of wheat, and the machinery has been arranged in such a manner that the wheat is discharged from the barges in the canal in any bin without any manual labor being employed to move the grain. From these bins the different wheats are drawn off by spouts and mixed in the required proportions by a patent wheat mixer, from whence it is elevated into a wheat-cleaning department. The only attention required is the fixing the weight of the different quantities of wheat in the mixture, as the machine will stop of its own accord if one grade or kind of wheat runs short. This machine is said by those who have seen or used it, to be a perfect wonder in its performances, but I will leave it the readers of the UNITED STATES MILLER to form their own opinions as to its merits, when they have read the description of the machine, which I hope to give in my December letter.

On the 9th of last month a silver drinking mug was presented to Capt. Crawford, of the Clyde Shipping Co., by the President of the National Association of British and Irish Millers, Mr. Pritchard Harvey Dow, as a souvenir of the trip to the Eddystone Lighthouse, which was taken in the steamship Portland, commanded by Capt. Crawford, by many of the visitors to the convention held at Plymouth in July last. This testimonial was provided by a special subscription, and there were at the presentation besides the President of the National Association of British and Irish Millers, the Mayor of Plymouth, Alderman A. J. Waring and the members of the Convention Local Reception Committee. On the cup, which is very handsome, and plated with gold on the inside, was the following inscription:

NATIONAL ASSOCIATION OF
BRITISH AND IRISH MILLERS,
"The golden grain, God's gift, we grind."
PLYMOUTH CONVENTION,
1888.

Presented to Captain John Crawford, of the S. S. Portland and Commander of the Clyde Shipping Company's fleet, by some members of the above Association, as a souvenir of a pleasant trip around Eddystone, 5th July, 1888, by invitation of the Mayor of Plymouth, Henry J. Waring, Esq., J. P.

No serious fires have occurred in flour-mills for some time until within the last three weeks, when one has taken place every week. The first mill fire broke out early on the 11th of October in the flour-mills of Messrs W. & J. Bairstow, at Keighley, and although two fire engines were speedily brought to work, it was impossible to save that portion of the buildings in which the fire broke out. A large

plant of new machinery was destroyed. The second fire, for which no cause is assigned, occurred on the 15th of October, in the Lenwade mills, situated on the River Wensum, some ten miles from Norwich. Messrs. Sherpin & Son were the occupiers of the mills. The result of the fire was the complete destruction of the main building, the bare walls only being left. The building burnt out was fitted with eight pairs of stones, and also contained some roller mills, the motive power being supplied by three water-wheels. It is feared the insurance, which is roughly estimated at £10,000, will not cover the loss. The third fire took place in the Tavistock Mills, South Devon, which were burned to the ground on the 27th at midnight. The mill was the property of Mr. Russell Harris, who was Chairman of the Reception Committee of the Plymouth Convention and helped largely to make the meeting the success it undoubtedly was. The mill was stored with a large quantity of grain and flour, the whole of which, with the machinery, was completely destroyed. The building and its contents were insured for £10,000.

Mr. Seth Taylor, the largest individual Miller in the United Kingdom, was interviewed last month. Some of the questions asked by the reporter of the *Daily News* are quoted here, and will give some idea as to Mr. Seth Taylor's opinion of the English miller's trade and price of the quartern loaves in London this winter. Bread which was selling at 4d the 4lb or quartern loaf, is not now to be had for less than 5½ to 6d. In answer to a question put by the reporter Mr. Seth Taylor said: "The American crops are undoubtedly below the average, and so are our own. The crops in this country are very unequal, but on the whole the quality must be pronounced inferior, and the quantities considerably below the average. The season has been a poor one in France, too; prices, therefore, have gone up to some extent, but we should still think them low if we had not been demoralized by the exceeding cheapness of corn for the last two or three years. Figures have been unjustifiably low, and in great measure have been due to 'bearing' operations. I think they are still lower than the actual supplies in the market would warrant, and they may very likely advance a little. But with all the world within call, corn prices cannot go extravagantly high." "So far as you can see, then, there is no reason to apprehend that we are going to have the quartern loaf at semi-starvation prices this winter?" "None, whatever." "It is said in Mark Lane that you supply more baker's shops than almost any man in London. Do you find that the setting in of cold weather makes an appreciable difference in the consumption of bread?" "Oh, most certainly. Quite apart from any other personal sensations I could tell the state of the thermometer by the stock in my customers' shops. If the past four-and-twenty hours have been cold, I shall find them first thing in the morning with nothing but new bread on their shelves. If you and I sit down to breakfast with an appetite sharpened by a cold, frosty morning, we take, perhaps, a little extra meat. The bakers' best customers are those who get no meat, or fish, or eggs and bacon, and who think themselves fortunate if they can meet the demands of a keen appetite with an extra slice or two of bread and but-

ter. When you come to multiply that slice or two by millions, day by day for a long time, it amounts to something gigantic."

A decree was published on October 5 for facilitating the exportation of corn and flour from the ports of the Baltic, Black Sea and Sea of Azof, by admitting free of duty the foreign sacks required for the same.

France is buying largely of foreign grain, and the import of Australian wheat has been very large this season; one port, Rouen, has taken more than the whole quantity of Australian wheat imported into England.

In my next letters I shall be able to give you the result of the trial now proceeding in the law courts, of Munden, Armfield & Co., Milling Engineers, of Ringwood, Hants, *versus* Marriage, Neave & Co., Millers of Battersea, London.

L. MAYGROVE.

ABOUT DAMPING GRAIN.

One of the largest millers in the United States, C. A. Pillsbury, is credited with asserting that American millers do not dampen their wheat before grinding it. This is correct of some millers, but not of all, and the reason is not attributable to differences in millers, but to differences in wheat. Most of the California wheat ground in this State is moistened because it is found necessary to do so. On the other hand, Oregon wheat will not stand dampening, as it contains enough water without this treatment. On this account local millers prefer California wheat, as they can add the necessary water for nothing, which they have to pay for in the Oregon article. When shipped abroad or stored for months at tidewater there is less difference, as wheat which is not moist will become so when in a damp atmosphere. California wheat when afloat gains two to three per cent. from absorption of moisture. A certain percentage of water in wheat is essential to render it fit for grinding, and the moisture has to be either found in the grain or applied artificially thereto.—*Grocer and Country Merchant*, (San Francisco).

CANADIAN RAILROADS AND THE MILLING CENTRE.

"It is not strange," says the *Buffalo Commercial Advertiser*, "that the millers of Buffalo with one voice heartily seconded the resolution of Senator Cullom which orders an investigation into the relations of the new 'Soo' Railway with the Canadian Pacific, whereby the provisions of the Inter-State Commerce Law are evaded. This is a matter of almost vital importance to the large milling industry of Buffalo. There is no better location in the country at which to carry on a successful milling business than this is. We have easy and direct communication with the best wheat fields in the world. The grain can be brought here at low rates of freight, and the numerous railway lines leading to the great consuming centres of the New England and Middle States enable millers to market their products to the best advantage. But these advantages are all neutralized by the action of the railways, chiefly the Canadian Pacific with its feeders on this side of the line, in carrying Minneapolis flour to the seaboard and Europe at rates which place at defiance competition from here or any other New York milling centre."

EFFECT OF FLOUR-MILL DUST.

In order to test the effect of constant inhalation of dust in flour mills on the animal organism, M. L. Poincarre kept guinea pigs for two years in the most dusty part of a flour mill—that is to say, the department where the corn is cleansed from all extraneous matter by a special machine before being ground. Of twenty animals, ten remained alive at the end of two years. Those that died were mostly young ones. None of those showed traces of tuberculosis, but catarrhal pneumonia with profuse desquamation of epithelium; also in some cases localized interstitial pneumonia and extravasation of blood. Dust, consisting of grains of starch, etc., was found, more particularly on the nasal mucous membrane, but only to a small extent in the bronchi.—*Lancet*, (London).

ESTABLISHED 1795.

The *New York Shipping and Commercial List* is the oldest newspaper published in this country that is devoted exclusively to mercantile interests. It has always been acknowledged as the very best exponent of the markets for general merchandise, and its figures are quoted widely and its Review is accepted everywhere as an accurate reflex of the markets, and acknowledged as official by the courts. They are based, whenever possible, upon actual transactions. Sensationalism, predictions, etc., are studiously eliminated from its columns. Its information is gleaned from reliable sources and written by a corps of reporters trained to the business. Hence it has gained the proud prominence of being the first Commercial Newspaper in the country. Its circulation extends to almost every country on the globe, rendering it the very best medium for advertising extant. No man doing a mercantile business can afford to do without it. It has the largest circulation west of the Alleghenies of any New York paper.

OIL AS FUEL AT CHICAGO.

The *Chicago Tribune* says: It is reported that the pipe line for the bringing of oil to Chicago from Lima, O., which has just been completed, has a carrying capacity of 1,000 barrels per hour. This is equal to 8,760,000 barrels per year. The discussion of the subject last winter elicited from practical men who are using the oil on a large scale that they obtain from three barrels as much heating power as they used to get from a ton of good coal. Accepting this as the ratio, it follows that the supply through the Lima pipe of eight inches diameter will be equal to 2,920,000 tons of coal per year if the service be uninterrupted during the whole time, and amounts to 65½ per cent. of the entire annual consumption of coal in this city. Allowing for the difficulty of keeping the oil flow up to the theoretical maximum and for possible exaggerations in the estimates, it is not an overallowance to say that the oil delivery will increase the available quantity of fuel to this city by about 50 per cent. The result of this can scarcely be other than an important cheapening in cost to the consumer.

The George T. Smith Middling Purifier Co., Jackson, Mich., are preparing their plans for their new plant.

UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00
 To Canadian subscribers, postage prepaid..... 1.00
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 All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker.
 Bills for advertising will be sent monthly, unless otherwise agreed upon.
 For estimates for advertising, address the UNITED STATES MILLER.

[Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.]

MILWAUKEE, NOVEMBER, 1888.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

THE Michigan Millers' Association held an interesting meeting at Grand Rapids, Nov. 13.

READERS should examine carefully our premium offer on another page of "Fifty Novels."

THE concluding articles on "Power Transmission," by A. J. Shaw, will be published in our December number.

ARE you about to build? If so, write to us for a copy of "BREAN'S HOUSE PLANS," and enclose fifty cents in stamps.

THANK the Lord.—The election is over. Now let every body get right square down to business and accumulate a surplus.

TWENTY-SIX cargoes of wheat and 13,650 bbls. of flour were shipped from San Francisco to Great Britain during October.

NICHOLAS ELLIS, one of the best known millers in this country, died at his home in Evansville, Ind., Nov. 2, of typhoid fever.

C. A. PILLSBURY Esq., the Minneapolis miller, is reported to have purchased a number of "Reform" purifiers while in Europe.

BUCKWHEAT flour is selling in France for \$1.13 per 100 lbs.; in San Francisco, for \$2.00; in New York, for 1.50, and in Milwaukee for \$1.40.

THE English press and various commercial organizations are agitating the adoption of the decimal system of money and weights and measures.

Do you want good, pleasant reading matter, and enough of it to amuse a whole family during the long winter evenings for a dollar? If so, see adv. of "Fifty Novels," on another page.

A DUST explosion occurred in a grain conveyor running from the elevator to the malt house of the Schlitz Brewery, Nov. 15. Quite a little blaze was started, but was extinguished without doing much damage.

WE regret to announce the death of Anton Klaus, who was engaged in business at Jamestown, Dak. He was a miller and grain dealer, well known to the western trade. He was formerly in business at Green Bay, in this state.

FLOUR mill building in the South continues at a rapid rate. During the first nine months of 1888 there were built or started, in that section 114 mills of various sorts and sizes, against 98 in the corresponding period of 1887, and 71 in 1880.

THE cost of carrying a bushel of wheat from Chicago to New York in 1870 was: By lake and canal, 17.10 cents; by lake and rail, 22 cents; all rail, 33.3 cents. In 1887, by lake and canal, 8.21 cents; by lake and rail, 12 cents; all rail, 16.3 cents.

THERE is little doubt but the high price of flour will very materially increase the consumption in cornmeal. Mush and milk is certainly good, and a well-made "Johnny Cake" served up hot with nice butter about three times a week, is not only healthy but appetizing.

THE various State and District Millers' Associations that have met during the past month have appeared to be more interested in reducing the amount of flour production than anything else. From present appearances there will be little flour produced between now and January 1, in comparison with that produced since September 1.

THE Minneapolis Tribune "scooped" all the big dailies of the Northwest the day after election. By means of a special wire to New York it was able to give its readers as full returns as New York dailies, at the same time. Over 55,000 copies of the edition were sold. It was distributed through the Northwest by special trains over 2,500 miles of railroad.

Bradstreet's says: "The stocks of wheat flour in hands of jobbers and other wholesale distributing agents at centers east of the Rocky mountains, have increased from 1,039,068 barrels on October 1, to 1,761,558 barrels on November 1, a total which is seldom exceeded. The accumulation since the heavy advance in price is not difficult to understand."

THE Commissioner of Patents estimates that "from six to seven-eighths of the entire manufacturing capital of the United States, or six hundred millions of dollars, is directly or indirectly based upon patents."

Verily—our patent laws throw a decidedly comfortable mantle of protection around manufacturers—greater, indeed, than any protective tariff ever dreamed of.

MILWAUKEE millers are in favor of shutting down for the first three weeks in December, if Minneapolis millers will do likewise. The idea is a good one, and will give millers a chance to work off their stocks on hand, and to make improvements in their milling plants.

LATER. Since the above was written it is announced that the millers of Milwaukee, Minneapolis, St. Louis and Buffalo will shut down as suggested.

THE Prinz & Rau Mfg. Co., Milwaukee, Wis., have bought the plant of C. S. Birge, successor to Birge & Smith, millwrights and machinists, and will continue the business. The Prinz & Rau Mfg. Co. is also successor to Faustin, Prinz & Co., exclusive manufacturers of the Prinz patent improved smutter; the Prinz patent improved cockle machine; the Prinz patent combined cockle, oats and screenings separator, and the Prinz patent improved barley grader and cockle separator.

The *Millers' Gazette*, (London), says: "With regard to the comparative consumption of wheaten flour in winter and summer, it is estimated that in winter it is at least 25 per cent. greater than in summer, partly owing to the colder weather inducing a greater consumption, and partly to the scarcity of vegetables. Thus, while in mid-summer the weekly consumption in the United Kingdom is equal to about 450,000qrs of wheat, that in mid-winter is probably as much as 540,000 to 550,000qrs per week.

THE *Northwestern Miller*, Holiday Number, for 1888 will be issued shortly before Christmas. The publishers announce that it will excel in beauty, size and value any of their previous attempts in that direction. This is saying a good deal, for it was pretty generally admitted that their 1887 Holiday number was the best thing of the kind ever produced. We are a little curious to know how the publishers are going to beat their own record; but are prepared to see most wonderful things from those enterprising gentlemen in a city of enterprising business men.

A PROMINENT Milwaukee miller, on being interviewed recently, said: "The flour trade is stagnant. There has been an overproduction. Little flour, comparatively, is being bought. The present price is all right, but it is hard to sell. There is no chance for export trade because wheat here is so high and ocean freights have advanced. The course of the Minneapolis millers during the recent wheat corner has done much to bring about the present state of the market. They have been manufacturing flour at the rate of from 175,000 to 185,000 barrels a week. Now they don't know what to do with it. They are in a hole, and will have to get out of it themselves."

WHILE visiting an engineer in a flour mill recently, we saw the lines following stuck up prominently above a little shelf where he kept his monkey-wrench and a few other tools. We do not know who the author is; but his lines are suggestive.

There was a fellow in our shop,
 His work was at the bench,
 And every time he struck a blow
 He used the monkey-wrench.

And when he found his wrench was gone,
 With all his might and main,
 He went and got his neighbor's wrench,
 And commenced to strike again.

THE "Man of Mark Lane," in a recent number of the *Mark Lane Express*, says: A failure in the flour trade, announced recently, peppered the London market to the extent of some £14,000, and made some folks feel bad. It was freely stated that this failure was due

to the "option" business, and I, for one, should be delighted to see the financial destruction of every firm connected with it, directly or indirectly, inasmuch as legitimate traders, at the present time, are at a loss to know with whom they deal.

* * *

THE Russian Government is endeavoring to facilitate the exportation of wheat and other grain, and it is probable that we shall receive very large consignments from that quarter. Decrees have been published by which foreign sacks are to be admitted free of duty into Baltic ports for wheat and flour, and to permit foreign joint-stock companies to carry on business in Russia without obtaining special Imperial authorization, provided that they only sell foreign manufactures in the country. A similar concession is granted to foreign steamship companies running to and from Russia. Evidently, Russia intends to secure all the British gold she can obtain in exchange for her cereal produce, and Uncle Sam will probably find himself undersold in our markets once more.

CHINESE MILLING.

The Chinese nation has from time immemorial ground various kinds of grain into meal or flour for making breadstuffs, much in the manner as our forefathers did in Europe. Man-power, animal-power and water power have all been used to drive the mills according to the requirements and conveniences of various localities and individuals. In all cases that have come to my knowledge the grain has been reduced between two stones, the one a movable, the other a fixed stone. There are, however, in some parts of China, mills of a peculiar kind of construction, such as I have never seen or heard of as existing in other countries. These particular mills consist of a stone table, some five or six feet in diameter, which serves as the nether stone. The upper stone in such a mill consists of a tapered cylinder, the taper being about equal in the diameter at each end to a segment of the nether stone, and being properly pivoted to the centre of the nether stone, is made to roll over it by the power applied to its largest or outer end. This difference in diameter of the rolling stone cylinder and regular taper are actually necessary in order to have a smooth movement and ensure the perfect grinding of the grain into fine flour in two or three grindings, if not in one.

Now it strikes me as feasible that some of our mill manufacturers who are not overburdened with orders, might turn their attention to China as a possible market for their manufactures. Iron roller mills can be made according to the best known Western methods, but made in special sizes to suit the requirements of Oriental markets. Thus a one-man power mill ought to be made about one-third smaller than the mill at home of the same designated power, because the average Chinese and Oriental generally are less muscular than the average Englishman or European generally. The same rule holds goods with respect to cattle-power. Mills may, however, be made of suitable size to be worked by two, three, or four men, as manual labour is very cheap inland, and cattle-power not always available. Power mills, to be

driven by turbines or windmills, may remain of the usual sizes in use at home, care being taken that the wearing parts can be easily got at for changing and replacing by spare ones kept in stock. Iron rollers are of course preferable to burrs, as they can be more easily re-sharpened whenever dulled by wear. The best known machines for preparing grain for grinding ought also to receive some attention, and to be obtainable at the same time and place as the mills, whenever required. A person on buying a mill and getting it three or four months after having given his order, would be rather astonished on receiving his mill to learn that he would have to apply to another establishment and wait another three or four months for something that is indispensable to his producing good flour or meal with the mill to hand. All accessories, in fact, ought to be procurable at one and the same time. All possible facilities ought to be given to any one desirous of learning the use of such things by the manufacturers, so as to encourage the introduction of their respective wares in a country, where they are as yet unknown. It is all very well for an Englishman to say, I am a millwright, but I am not a miller, or baker, or farmer, &c. In England that may do, but he must remember that he who lays himself out for getting orders from China ought to be able to give all necessary information in connection with the use of his machines likely to promote a desire for acquiring such, because such information is seldom obtainable out here, and requires at least three or four months waste of time to procure from Europe.—Shanghai Correspondent of the *British Trade Journal*.

BREAD AND BREAD STUFFS IN SWEDEN.

Mr. Rufus Magee, U. S. Consul at Stockholm, writes as follows:

"Wheat and the products of wheat are hardly the staple food of the people of either country. Rye and oats furnish the principal food product of the people of the two kingdoms. Wheaten bread is used by certain classes in cities and larger villages, but such persons are numerically small compared with the great body of the people.

"In the north of Sweden oats are used almost exclusively for bread, porridges, &c., while in other districts rye is used universally.

"The statistics for 1887 are not yet compiled. In 1886, there were imported into this kingdom 32,830 tons of wheat and 38,550 tons of wheat flour. This latter came almost exclusively from Germany and Russia, while most of the wheat came from those two countries. There were no direct cargoes from the United States, and what American wheat was imported was sold at an English, German or Danish port. It would likewise be impossible to say how much, if any, American wheat entered into the composition of the 38,550 tons of flour manufactured abroad and sold into this kingdom in 1886.

"The competition of no one country had much influence on the conclusions of the diet in imposing the import tax. The raising of wheat has ceased to be profitable in Sweden, and has been so for years. Estate property has consequently fallen in value and ceased to be remunerative. The lower chamber of the diet has a majority of estate owners, who, after a long struggle, found themselves this

year with power to legislate for their own and suffering fellow-landowners' interest. They have exercised this power; they have exercised it against the sentiment of the people of the kingdom and of the throne.

"The price of wheat bread has risen to a sum a little more than the proportionate duty on wheat. There is no duty on bread, and much of the supply comes from Denmark, and yet it has increased in proportion to the increase of the raw material."

The following two items are from *The Miller*, London:

MILLING IN ITALY.—The recent increase of import duties in Italy has well-nigh killed the importation of Hungarian wheat, a trade which had been steadily growing for some years past. These duties have come as somewhat of a blow to the milling industry of North and Central Italy, which has of late taken a very remarkable development. For the near future the wants of the mills seem to be pretty well covered by the heavy stocks which the chief grain holders of Italy had laid in as provisions of the change in the tariff. Altogether, Italian millers appear to be in far from a happy frame of mind, to judge at least, by a compact into which many millers have entered. This agreement binds the subscribers not to undertake the forward deliveries of flour without stipulating that, first, all increased dues or other governmental duties imposed subsequently to the conclusion of the contract shall fall upon the purchaser; and secondly, that such contract shall, in the event of war or of a blockade of the Italian coast, become null and void.

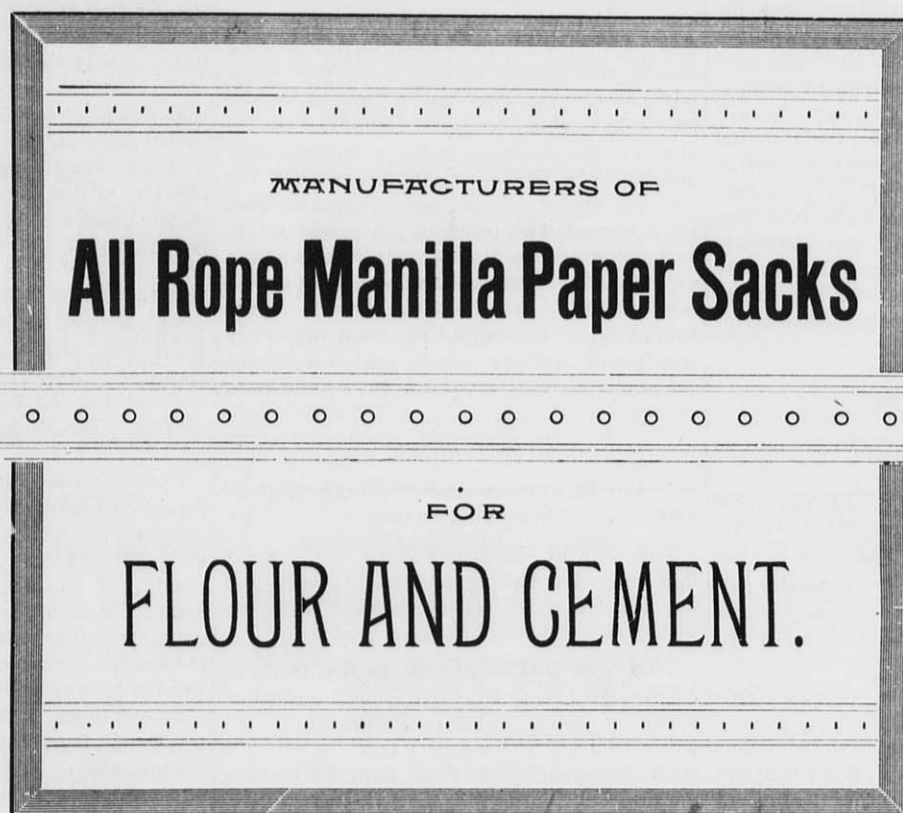
MILLING IN DENMARK.—Milling in Denmark, which is one of the most important industries of that industrious little kingdom, is said to be suffering very severely from German competition. A decade since Denmark exported 700,000 sacks of flour (of which a certain proportion found their way to this country); but in 1883 the flour exports had fallen to 560,000 sacks, and they are now given at 347,635 sacks. This is the more serious from a Danish point of view, because a large number of flour mills in Denmark are merchant mills in the strict sense of the term, fitted in many cases with modern machinery, at a considerable outlay of capital, and dependant to a great extent upon their exports for existence. Formerly these mills had more or less profitable customers in Norway and Sweden, but they have lost much of their hold on those markets owing to the competition of certain merchant mills situated in the larger ports of North Germany. The Danish millers assert that the advantage won by their German competitors is due not so much to superior equipment and skill as to the system of export bounties which they enjoy by virtue of drawbacks, a system which has, by the way, lately placed the well-equipped millers of Belgium at a serious disadvantage, compared with some of their competitors on the French side of the Belgian border.

HIGH DIFFERENTIAL.

Talking of differential corrugations, many seem afraid of a high differential, such as five or six to one. Why should they be? Have they forgotten that the differential on the millstone, with an area of grinding

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surface many times greater, was one hundred and twenty to two hundred to one? I do not believe that rolls need to run six hundred to a thousand revolutions per minute, but I believe that on an abrupt reduction system, on nearly every reduction from first to last a high differential proves an advantage in the quality of the work done. This need not be obtained so much by increasing the speed of the fast roll as by decreasing the speed of the slow roll. Can any one give me any good reason why the slow rolls need to run one hundred and fifty to two hundred and fifty revolutions per minute? It is not necessary to prevent uneven wear of corrugations, for sixty revolutions is enough for that, nor is it necessary in order that the rolls may take their feed. The above theories seem to be generally accepted, but any one who will try the experiment will be surprised to find they are entirely wrong in such reasoning. I think makers of rolls are afraid they cannot make a showing of using light belts and maintain a high differential, and therefore cultivate a wrong impression. But if more effectual work is demonstrated the miller will gladly stand the expense of heavier belts.—*Modern Miller.*

FOREIGN ITEMS.

ANOTHER large roller mill is to be built at Cape Colony, South Africa.

MESSRS. J. Pernell & Co., Sydney, and Mr. J. Hayes of Albury, New South Wales, are remodeling to the roller system.

RUSSIAN wheat this year is unusually full of cockle and weed seeds as well as kernels of other grains and separating cylinders are in great demand.

PORTUGUESE DUTIES ON GRAIN AND FLOUR.—Consul Lewis, of Lisbon, reports under date of May 10 that Portugal has imposed an additional duty on cereals and flour not shipped previous to the 4th inst. of 25 to 30 per cent.

THE Canadian press makes frequent allusions to the commercial union of the United States and Canada. Not much is heard of it on this side of the line. No doubt there would be mutual advantages but in the deal Canada would doubtless "get the big end of the stick."

CITIZENS of Winnipeg, Man., are endeavoring to organize a company for improving the waterpower of the Assiniboine river. It is estimated that the necessary improvements could be made for \$300,000, and that the power could be rented to manufacturers for more than \$50,000 per annum.

THE *Bombay Gazette* says that it is about as certain as anything can be, that India will be eventually connected with Europe by almost, or quite, continuous railroads, and calculating the length of time that the journey from India to London would take, if the Bolan Line were continued through Kandahar and Herat to the Russian Stations of Douchak, we find that the Bombay mails might get to the English capital in 12 days.

AN ingenious contrivance is shortly expected to endow street life in Munich with additional interest. The machine is in appearance like a comfortable cab, is set upon three wheels, the front one, as in a tricycle, being used to steer by. A metal box or cis-

tern behind contains a supply of benzine oil, from which, while the machine is in motion, the gas required in the motor is generated. A quart, or about threepence worth of oil, is all that is required for a drive of 10 miles, which can be accomplished in an hour. The vehicle holds four persons.

THE *N. Y. Com. Bulletin*: Statistics of the trade of India for the past decade show an increase of 35 per cent. in the volume of exports. The increase has been steady in all the principal classes of exports except opium, which led the list of exported articles ten years ago, but has now fallen behind raw cotton, although still ahead of wheat and rice. Exports of raw cotton have increased during the decade by about 40 per cent., while cotton yarns and twist have increased four-fold; wheat exports have trebled in amount, and rice exports are now 30 per cent. greater than at the commencement of the ten-year period. Last year's exports from India exceeded all previous years, and are, in turn, exceeded by the records of this year's export trade. Although there have, of course, been minor fluctuations, the growth of the Indian export movement has been singularly steady and uniform, while trade conditions are now unusually favorable to its extension.

TRADE NOTES.

A SAN FRANCISCO dealer recently shipped 5 500 sacks of bran to Australia.

THE Jeffrey Manufacturing Co., report that they are having a splendid trade and that the demand for their elevating and conveying machinery continues unabated.

THE corn sheller known to the trade as "THE MILLERS' FRIEND," and manufactured by Jacob Valentine, Gorham, N. Y., was recently put to a severe trial, in which it showed a capacity of four hundred bushels per hour.

THE MILWAUKEE BAG CO., 134 West Water St. is an establishment of great value to millers, especially in the Great Northwest. The Company bought out the business of H. P. Leavens & Co., sometime ago and the present managers are active, experienced business men. Anything in the line of flour or grain sacks, twines, etc., can be had at bottom prices, promptly. Millers will find it worth the trouble to correspond with them.

AN ERROR CORRECTED.

UNION, CASS CO., NEB.

Editor United States Miller:

I noticed in your paper for October, under the head of "News," information to the effect that Dawson & Ross had removed their mill from Factoryville to Cloverdale, Cal. Such is not the case. Dawson & Ross traded their Factoryville mill property to T. M. Warne, for his flouring mill property and wood working plant, in Anderson Valley, Boonville, P. O., Mendocino Co., Cal. The consideration or valuation of each was \$11,000. They, Dawson & Ross took possession there on July 16th, and I here on Aug. 1st. This is a combination mill, about 40 bbls capacity. Am thinking of changing to full roller, short system, in the spring. Our work is mostly exchange trade. We give from 20 to 30 lbs. flour and 12 lbs. bran to the bushel, mostly spring wheat, and rather an inferior crop this season.

Respectfully yours, etc.,

T. M. WARNE.

BRIGHTENING PROSPECTS.

It is cheering to hear on all sides that the milling trade is, to use a familiar but well understood phrase, "looking up." From all parts of the kingdom, from Ireland as well as from Scotland, come reports of activity and life, of flour mills running full time, which little more than a year ago were closed, or next door to that direful condition. The United States have not ceased sending us flour—far from it; but the flood with which we were threatened in the spring of 1887 has sensibly ebbed, and in all parts of the United Kingdom there are flour millers who, in spite of the indifferent condition of this late harvest, are doing plenty of business, and doing that business at a very fair profit. The improvement that has taken place in flour milling is reflected as in a mirror on the countenances to be seen on Mark Lane Corn Exchange, where during the past few weeks at any rate, cheerful smiles have generally taken the place of the melancholy resignation which had become the settled expression of the attendants of the corn market—especially on Mondays. Of course, even now there is shade as well as light, but the blackness which has settled on Mark Lane has been dispelled by a welcome flood of sunshine. Let us trust that the glass will continue to register fair.—*The Miller* (London, Nov. 5.)

PROPORTIONS OF STEAM BOILERS.—Our foreign exchanges have recently given publicity to the following: "In a recent communication to the Societe Scientifique Industrielle, of Marseilles, M. D. Stapfer remarked that as he had never met with any good, practical rules for the proportions of boilers for steam engines, he had taken the trouble to examine a very large number of different types, which were working satisfactorily, and from them had deduced the following rules: The water level in the boilers of torpedo boats was usually placed at two-thirds the diameter of the shell, and in marine, portable and locomotive boilers three-fourths this diameter. The surface from which evaporation took place should, however, be made greater as the steam pressure was reduced, that was to say, as the size of the bubbles of steam became greater. To produce 100 lbs. of steam per hour at atmospheric pressure this surface should not be less than 7.32 square feet, which may be reduced to 1.46 square feet for steam at 75 lbs. pressure, and to .73 ft. for steam at a pressure of 150 lbs. It is for this reason that triple-expansion engines can be worked with smaller boilers than were required with engines using steam of lower pressure. The amount of steam space to be permitted depends upon the volume of the cylinders and the number of revolutions made per minute. For ordinary engines it may be made a hundred times as great as the average volume of steam generated per second. The section through the tubes may be one-sixth of the fire-grate area, when the draught is due to a chimney from 27 ft. to 33 ft. high, which in general corresponds to fuel consumption of 12.3 lbs. of coal per square foot of grate surface per hour. This area may be reduced to one-tenth that of the grate when forced draught is employed, but for flue boilers without the tubes the area through the flues should not be less than one-third or one-fourth the grate area.

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inee, Mich.

Marinette, Green Bay, Depere, Neenah,
Menasha, Appleton, Wis.

THE TABLE OF EXPRESS TRAINS.

STATIONS.	DEPART.	ARRIVE.
Champion, Republic,	*1:35 A. M.	*3:20 A. M.
Iron Mountain, Menominee,	*1:35 A. M.	*3:20 A. M.
Marinette, Green Bay,	3:10 P. M.	3:55 P. M.
Depere,	*7:35 A. M.	
Green Bay, Depere, Apple-	7:55 A. M.	3:55 P. M.
ton, Menasha, Neenah,	3:10 P. M.	10:20 A. M.

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NEWS.

The Chesebro Milling and Elevator Co. of Whitewater, Wis., have incorporated with capital of \$65,000.—The Crown Roller Milling Company, Bloomington, Ill., made a confession of judgment Sept. 28, in the sum of \$27,000, in favor of P. P. Smith & Sons, bankers of that city. The property of the company is now in possession of the sheriff, and a receiver will be appointed. The assets are claimed to be heavily in excess of the liabilities.—The boiler inspectors of St. Louis, Chicago, New York, Cincinnati, Omaha and Denver, met in St. Louis Sept. 22 and issued a call for a National Convention at Pittsburg, Nov. 20, for the general discussion of the inspection service and laws, for the better protection of life and property, and also to arrange for a uniform system of inspection throughout the country, and to stop the sale of old and worthless boilers.—The Fulton Grain Milling Company's grain stores and elevator, Nos. 156 to 156 Furman street, New York, were destroyed by fire November 13. The loss is about \$550,000, with insurance of over \$300,000. There were 350,000 bushels of oats, corn and wheat in the warehouse. The Wheeler elevator of Buffalo was also destroyed November 13, involving a loss of \$450,000, covered by insurance. Included in store was 80,000 bushels of wheat.—The failure of John McKinley, a wholesale flour dealer, of Albany, N. Y., for \$100,000, is announced.—Jones, Lyddam & Co. have built a flour mill costing \$20,000, at Derwood, Md.—The National Mills, located on Merwin street, Cleveland, Ohio, owned by M. B. Clark & Son, was on Sept. 15 totally destroyed by an explosion and consequent fire. Two of the employees were killed and four severely injured. Loss \$125,000; insurance \$95,000.—A 75-barrel mill is being built at Dixon, Ky., by Geiger & Brill.—Boutwell & Dorsey are building a 35-barrel roller mill at Pettigrew Mills, Ark.—A new \$20,000 roller mill has recently been completed at Derwood, Md., for Jones & Co.—The Henderson Mill Co. are replacing their mill at Henderson, Ky., recently burned, with a large flour and cornmeal mill.—Marshall & Bolten have built a new corn mill at Whitesboro, Texas.—Work is progressing on the new Imperial mill at Duluth, Minn.—The Greentown Roller Mill and Elevator Co. has been incorporated at Greentown, Howard Co., Ind. Capital stock \$10,000.—The Ellsworth Milling Co's roller mill located at Terre Haute, Ind., together with 10,000 bushels of wheat and 1,000 barrels of flour were recently destroyed by fire. Loss estimated at \$50,000; insurance \$23,000.—A 250 bbl. water power roller mill is being built by Morrison & Willard at Baxter Springs, Kan.—The Newton Roller Mill Co. has been incorporated and will build a mill at Newton, N. C.—The Chambers Flouring Mill Co's mill at Latrobe, Pa., was lately burned. Estimated loss \$35,000; insurance \$12,000.—Z. T. Mitchell, of Rogers, Ark., will build a 30 barrel roller mill.—J. N. O'Brien of Humboldt, Kan., has purchased the mill owned by Mr. Thompson at Chanute.—The Pearl Milling Co. has been incorporated at St. Joseph, Mo., and will soon commence business.—The Goodlander Mill at Fort Scott, Kan., is being rebuilt and will have a capacity of 200 barrels.—The capacity of the Eagle Mills located at McPherson, Kan., is being increased to 150 barrels.—The Everest Grain and Mill Co. has been incorporated at Everest, Crown Co., Kan. Capital stock \$9,000. Directors, W. W. Price, C. Caplet, J. F. Marak.—R. T. Janns has completed a 40 barrel roller mill at Ash Grove, Mo.—James G. Shunabarger has built a 75 barrel roller mill at Weston, Ore.—A new 50 barrel mill has been built at Fredonia, Ind., by J. W. Vest.—A new 40 barrel roller mill has been built by Herman Huckerdorf, near Fairport, Iowa.—Wm. F. Greek has completed a new 50 barrel mill at Kunkle, O.—A. Rubent & Sons have built a 100 barrel roller mill at St. Wendall, Ind.—A new 75 barrel roller mill has been recently built by G. Brill at Dixon, Ia.—Richardson & Spoonemore, millers at Huntsville, Wash. Terr., are succeeded by J. H. Richardson.—Clark & Eccles are building a 100 barrel roller mill at Logan, Utah.—During the month of August the estimated loss by fire to the milling fraternity of the United States footed up to \$600,000.—The new 700 bbl mill at St. Cloud, Minn., owned by George Tileston, has started up.—The Thornburg Milling & Elevator Co., successors to the Thornburg Milling Company, of Martinsville, Ind., has been incorporated. Capital \$20,000.—The Elkins Mercantile & Roller Mill Co., of Elkins, Ark., has been incorporated with a capital of \$10,000.—The Henderson Milling Co. of Henderson, Ky., whose mill was recently burned,

are rebuilding. The new mill will have a capacity of 125 barrels of flour and 100 barrels of corn meal per day.—The P. L. Terry Milling Co. of Roanoke, Va., are converting their mill to the roller system and with a capacity of 100 barrels per day.—The Shenandoah Mills, at Oswego, N. Y. owned by Penfield, Lyon & Co. was destroyed by fire August 21. Loss including that on between 400 and 500 barrels of flour destroyed, \$65,000; insurance on mill and stock \$42,000.—The liabilities of J. A. Closser & Co., grain merchants at Indianapolis, for whom a receiver has been appointed, are reported to be about \$135,000, and assets \$75,000. They have several creditors in New York.—At Peru, Ind., November 3, the flour and feed mill owned by James Smith, which was just built, and the machinery had just been set, was set on fire by some one unknown. It is a total loss, and will reach \$3,000, without any insurance.—At New Orleans, La., Nov. 6, the North American Rice Mill and adjacent property was burned. Loss \$11,000; small insurance.

NEW ELEVATORS.—Among the new elevators recently built, being built or about to be built, are the following:—Mt. Clemens Elevator Co., Mt. Clemens, Mich.; Virden, Flour Mill Co., Virden, Man.; Sarndes Grain Elevator Co., Sarndes, Ont.; Gate City Mill Co., Rapids City, Dak.; R. F. Hul & Co., Burlington, Iowa; E. Torrence, Worthington, Minn.; J. Schaeke, Unita, Iowa; Haynes, Garden & Co., Lexington, Ill.; Lake of the Woods Mill Co., MacMillan and C. A. Young, at De Lorain, Man.; J. P. Peterson, Ellsworth, Minn.; Seven \$25,000 elevators on the C. P. R., east of Winnipeg, Man., by the Keewatin Mill Co.; Port Huron Elevator Co., (450,000 capacity), Port Huron, Mich.

BAD BOILER SETTINGS.

Engineer: Is it not a little singular that persons who design boiler settings give so little attention to the back end of the boiler? There is no lack of every appliance and facility for the front end, including grates and all appurtenances, but the smoke box and access thereto, the blow pipe and its location, give very little concern, and are stuck in anywhere and anyhow. In an example before us, the blow-off pipe is set at the bottom back end about two feet from the smoke box, and runs down into the combustion chamber or flue, which is apparently about 12 inches deep at that point; how a man is to get at this joint, in case of leakage or for examination, is one of the things which no one can find out. Also, in the same design, the smoke box is 16 inches deep, and is a rectangular cell, to which access can be had only by a door which is about as large as that to a baker's oven. There is no possibly way by which a full grown man can get access to the back ends of the tubes for examination or caulking, or any other purpose, unless he can squeeze himself into a very small compass. Every part of a steam boiler ought to be accessible easily for inspection externally and internally, and it is a poor design and short-sighted economy which saves room outside to walk around in, and cramps the boiler so that an engineer cannot get around it.

The *British Baker* is responsible for the following: They were sweet girl graduates. They made a sponge-cake, and sent it—minus a label—to an agricultural show. A few days after they received a notice from the judges to the effect that their sample of concrete had been received, and the city would like an estimate as to the cost of block pavements of that kind, it being the most desirable of any presented, and just the thing wanted for streets where the travel was extra heavy. What a recommendation for a "light" cake.

WOULDN'T HEED THE DEACON.

"How about young Baldwin, who came down here?" asked a friend from out of the city of a deacon in a prominent New York church.

"I am extremely sorry to say that Baldwin failed to make a success of it here," replied the deacon.

"Is that so?"

"Oh, yes. He lost all his property, and is now peddling shoe-strings at the corner of Vesey street and Broadway."

"Indeed! I am sorry to hear it."

"Very sad, certainly—he comes of a good family. But he got drawn into Wall street speculation and lost his all."

"Ah, the maelstrom of Wall street, was it? Too bad."

"Yes, that's what I say. I tried my best to save him from it, not only because he was the son of an old schoolmate of mine, but also because I considered it my duty anyhow. My connection with the church would not permit me to look at it otherwise."

"Oh, I know, of course, that you would do what you could in such a case to guide a young man in the right path."

"Oh, certainly, certainly," replied the deacon in a modest tone. "I did what I could in my weak way. I went to him," continued the good man as he wiped his spectacles and looked out of the window thoughtfully; "I went to him, and says I: 'See here, George, you don't want to put your money in that Western Wind stock; the bottom is going to fall out of the whole thing inside of twenty-four hours. Just come in with me on this consolidated stock, and if you don't clear up fifty thousand on it inside of a week why, then, I'm a liar!' But he wouldn't listen to good counsel and went into Western Wind and dropped his pile. I suppose," went on the deacon musingly, as he adjusted his glasses, "that I might add by way of proof that I was right, that I put five thousand in the Consolidated myself and unloaded it on Brother Dobbs for seventeen thousand five hundred three days after. You well said, my friend, that Wall street is a terrible maelstrom."—*New York Tribune.*

AN exchange says dogmatism does not pay. Some milling writers, with the wheat berry lying on their desks, will look the grain over and see the dark or black matter in the crease and then they will write that "there is no crease-dirt in wheat." The miller who reads their dogmatic utterance will smile sarcastically as he reads, and, as he turns from the statement to his wheat-bin and sees on every blessed berry a black streak inextricably imbedded in a fold, he sighs and wishes for some of the wheat without the seam-dirt. He knows that such wheat grows only on the paper ploughed by the editorial pen, and he must go on and contend with that crease-dirt. He loses confidence in the writer and decides that the chief office of some men is to falsify.

W. G. AVERY, Cleveland, O., patentee of the Avery Seamless Elevator Bucket, had a new patent granted to him for a new elevator bucket, Nov. 6, 1888.

AN AUTHENTIC BUYERS' GUIDE.**MILL AND ELEVATOR BUILDERS,
MILL FURNISHERS, MANUFACTURERS OF AND DEALERS IN
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Edw. P. Allis & Co., Milwaukee, Wis., builders of complete Flour Mills, manufacturers of Flour Mill Machinery, and dealers in Supplies of every description. [Mr. 89.]

Garden City Mill Furnishing Co., Chicago, Ills., Mill Builders, manufacturers full line of Flour Mill Machinery, dealers in Mill Supplies, Bolting Cloth etc., etc. [Mr. 89.]

Borden, Selleck & Co., 48 & 50 Lake st., Chicago, Ills., manufacturers of "HARRISON CONVEYOR" for Grain, Malt, etc., etc. [Mr. 89.]

John C. Higgins & Son, 165 West Kinzie Street, Chicago, Ills., mfrs. of and dressers of Mill Picks. [Mr. 89.]

H. P. Yale & Co., Milwaukee, Wis., Manufacturers' Agents of Engines and Boilers, New York Leather Belting Co.'s Leather Belting, Dodge Wood Pulley.

Poole & Hunt, Baltimore, Md., manufacturers of Steam Engines, Water Wheels, Flour, Corn, Paper, Saw and Cotton Mill Machinery.

W. J. Clark & Co., Salem, O., manufacturers of "SALEM" Elevator Buckets, etc.

Thornburgh & Glessner, 18-22 N. Clinton St., Chicago, Ills., manufacturers of Mill and Elevator Supplies.

R. C. McCulley, (P. O. Box 214) Lancaster, Pa., manufactures Cob Crushers, Cooper's Stoves, Castings, Patterns, etc. [Mr. 89.]

B. H. & J. Sanford, Phoenix Iron Works, Sheboygan, Falls, Wis., manufacturers of the "IMPROVED WALSH DOUBLE TURBINE WATER WHEEL." [Mr. 89.]

John C. Kliner, York Foundry and Engine Works, York, Neb. Mill and Elevator machinery of all kinds, Engines, Boilers, Pulleys, Shafting, etc. [Mr. 89.]

The Gutta Percha and Rubber Mfg. Co., 159-161 Lake st., Chicago, Ill., Belting and Rubber Goods. [Mr. 89.]

The Avery Elevator Bucket Co., sole owners and manufacturers of Seamless Steel Elevator Buckets, Wason, Lake and Dart sts., Cleveland, O. [Mr. 89.]

Richmond Mfg. Co., Lockport, N. Y., manufacturers of Grain Cleaning Machinery, Bran Dusters etc. [89. Mr.]

N. Y. Belting and Packing Co., N. Y. Leather Belting Co., Goulds & Austin, Agents, 167 and 169 Lake Street, Chicago. [Apr. 89.]

Weller Bros., 94 Wendell st., Chicago. Mfrs Mill and Elevator specialties, Cups, Boots, Spouts, Steel Conveyors, Power Grain Shovels; dealers in Cotton and Rubber Belting, etc. [Apr. 89.]

The Nordyke & Marmon Co., Indianapolis, Ind., Flour Mill and Mill Machinery builders, and dealers in Mill Supplies of all kinds. [May 89.]

The Shields & Brown Co., 240 and 242 Randolph st., Chicago, and 143 Worth st., New York. Mfrs. of Sectional Insulated Air Coverings for steam, gas, and water pipe, etc. [May 89.]

W. G. Avery Mfg Co., 10 Vincent st., Cleveland, O., Specialties: Avery Lever Belt Punches, Avery Seamless Elevator Buckets, Belting, Elevator Bolts, &c. [May 89.]

The H. J. Deal Specialty Co., Bucyrus, Ohio. Headquarters for Flour and Grain Testing Appliances, and Specialties for the Milling, Flour and Grain trades.

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E. Sanderson & Co., "Phoenix Mills, Milwaukee, Wis., U. S. A. Manufacturers and Exporters of choice spring wheat flours. Daily capacity 1500 barrels. [Apr. 89.]

Bernhard Stern, "Jupiter Mills," Milwaukee, Wis. Roller Mill. Hard wheat Patents. Principal brand, "Jupiter." [Apr. 89.]

Faist, Kraus & Co., "Duluth Roller Mill," Milwaukee, Wis., Manufacturers and Exporters of choice spring wheat flours. Daily capacity 1500 barrels. [May 89.]

Russell, Andrews & Birkett Penn Yan, N. Y. Manufacturers of roller process Rye and Buckwheat flour. Absolute purity guaranteed. Write for prices. [Apr. 89.]

Texas Star Flour Mills, Galveston, Texas. Patents: Tidal Wave, Neptune, etc. Extra Fancy: Sea Nymph, Undine. Extra Choice: Sea Jewel, Melite. Family: Sea Pearl, Hera.

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NEW YORK AS A MILLING CENTER.

There is a steadily growing impression that New York City is destined to be one of the chief milling centers of the country ere long. There are many cogent reasons for this belief. Being the leading seaport and monied center of the country, with a large storage capacity, and also the natural terminus of the principal railways, as well as the Erie Canal, the available supply of wheat is generally likely to be abundant. Furthermore, as it draws its supplies from all quarters of the country, the assortment is, of course, apt to be better than ordinarily obtainable at interior points. This will assuredly give the miller a decided advantage. Loud complaint has been heard recently from the West, but particularly from the winter wheat States, regarding the difficulty of obtaining supplies of wheat at prices on a parity with those current in New York. These facts have induced several gentlemen of means and experience to erect a first-class mill here. Among the leaders in this enterprise are Messrs. B. B. Stuart, a well known citizen of Cincinnati, J. C. Out of the Produce Exchange and William Sumner. The mill which will be chiefly brick, and six stories high, with a daily capacity of 1,500 barrels, is now being constructed under the personal supervision of Mr. William D. Gray, the well known expert of the firm of E. P. Allis & Co., of Milwaukee. No pains or money will be spared to make this mill perfect in every respect. The location is an excellent one, being on Mariners' Harbor, on the Kill Von Kull, Staten Island. The property is 987 feet deep, 300 feet wide in the rear and 265 feet front on the water. The dock will have 20 feet of water at high tide and 14 feet at low tide. Moreover, the Baltimore & Ohio Railroad will run tracks down the entire length of the property. This will give first-class railway as well as water facilities. Hence wheat can be delivered direct from cars or boats into the mill, and the flour out in the same way.—*Produce Exchange Reporter*.

BELT SPEED AND POWER.

Practical Mechanic: We say that the amount of force transmitted by a belt of given width depends upon the speed of the belt: That if 600 feet per minute will give 10-horse power, then 1,200 feet will give 20-horse power, and that if we only run the belt fast enough we could drive a whole machine shop with a 3-inch belt. This is a correct statement and may not appear at all difficult of comprehension but, unless we bear in mind that the increase in velocity must be accompanied with an increase of leverage, we may make a mistake.

In running a lathe with the belt on the slowest belt speed, taking all the cut it will carry, suppose that we stop the feed, withdraw the tool and then change the belt to the next faster step on the cone; then we will have increased the speed of the belt: but, if we undertake the same cut again, the belt will not carry it at all, because, although we have increased the speed of the belt, we have not increased its leverage. But if we now put in the back gearing, the leverage will be increased and the belt will carry a heavier cut than it did in the first instance.

Again, suppose the belt from the line shaft to the countershaft be too narrow for its work; we cannot increase its efficiency by

running the line shaft faster, for although that would make the belt run faster, it would not increase its leverage, or, in other words, it would not change its speed in relation to the speed of the work.

To make the narrow belt do an increased amount of work, or do its work easier, we must put a larger pulley on the line shaft, and also increase the size of the pulley on the countershaft in the same proportion. This will give the belt a greater distance to travel in same time, and will give it a greater leverage, while the lathe and the line shaft will both run at the same speed that they did before the change of pulleys, but the efficiency of the belt will be greater.

WHEAT IN AUSTRALIA.

In South Australia, owing to the unfavorable crop prospects, higher prices are asked, and farmers are not disposed to sell freely of their surplus, which at the commencement of September, was estimated to amount to 200,000 tons or about 900,000 quarters in South Australia and Victoria. Of this amount a certain proportion would be required for inter-colonial markets. A cablegram of October 20 from Adelaide states that the crop prospects were very bad, and that rain would do but little good. The yield per acre was not expected to exceed three bushels, against about ten bushels last year. This, if it prove correct, means that the surplus in South Australia next season will mainly consist of what is carried over from the present season.—*Dornbusch, Oct. 26*.

The Financial Chronicle (London) in a late number says:

Candidly, the Red River Railway dispute is assuming a jagged-edged and troublesome form. Both the Canadian Pacific and the Macdonalds are obviously in earnest in asserting what each side considers its rights. Unhappily, the contest comes at an awkward hour, when Brother Jonathan is notoriously carrying on a most dangerous flirtation with Miss Canada. To use metaphor again, the sweet girl has kissed her cousin. Quebec, as a province, is certainly disloyal in part, and should Winnipeg begin shaking hands with Washington over this matter, as she threatens to do, England may find it necessary to administer a sharp rebuke to both provinces. Treason to the Empire has extended far beyond the shores of Erin and old England, and the Yankee-Irish race will lose no opportunity of setting Canada against us. The Sackville blunder is equally unfortunate at the moment, when so many influences are at work to bring about a diplomatic rupture with the Washington Government. On this side the Presidential election will be watched with the keenest interest, as the success of President Cleveland's rival would accelerate the danger, and render both Canadian and American stocks very dangerous holdings.

Recent Publications.

Scribner's Magazine for November (Chas. Scribner's Sons, New York) is as full as a nut with reading of absorbing interest. To begin with, there is the long-promised article by the lamented Gen. Sheridan entitled "From Gravelotte to Sedan." The General gives a graphic description of the movements of German troops engaged in the fight, and an account of the surrender at Sedan; all spiced with gossip concerning the German Emperor and Prince Bismarck. The article is illustrated with a fine portrait of Gen. Sheridan from the last picture taken, a portrait of King William, of Prussia, and a number of battle scenes. A criticism of Matthew Arnold, by Augustine Birrell, is accompanied

by a portrait of the lamented poet and critic. B. B. Adams, Jr., contributes an interesting illustrated article to the railroad series, entitled "The Every day Live of Railroad Men." The opening chapters are printed of a story by Robert Louis Stevenson, entitled "The Master of Ballantrae." The same charming writer contributes "More Random Memories." Under the caption "The Education of an Engineer," which include a venture into the sea in diving armor. There are two capital short stories, "Barum West's Extravaganza," by Arlo Bates, and "The Port of Missing Ships," by John R. Spears, the latter in the vernacular of the "foc'sel."

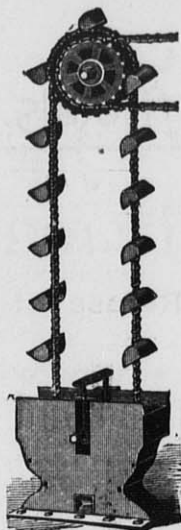
In Harper's Magazine for November (Harper & Brothers, New York), C. H. Farnham is given first place with an interesting article, "The Lower St. Lawrence." The illustrations are numerous and of a high order of merit. Hunters will find interest in an exceedingly well illustrated article by G. O. Shields on "Elk Hunting in the Rocky Mountains" and yachtsmen will be attracted by Tristram Ellis' "Boats on the Lagos," and the third of Elizabeth Robins Penell's papers on "Our Journey to the Hebrides." A description of the New York Real Estate Exchange is illustrated with numerous portraits. "A Pink Villa" is the title of a story by Constance Fennimore Woolson. The novels "Annie Killburn," by William Dean Howells, and "In Far Lochaber" by William Black, are concluded. There are a number of amusing incidents in Charles Gayarre's article on "The New Orleans Bench and Bar in 1823."

"Earthlings" is the name of the complete novel in the November number of Lippincott's Magazine (J. B. Lippincott Co., Philadelphia). It is from the pen of Grace King, the author "Monsieur Motte." Besides the story feature there is another chapter of John Habberton's "At last—Six days in the Life of a Teacher." Under the title "The Experience of a Rope-Walker," the famous Blondin tells about his performances on the tight rope, including his remarkable feats at Niagara Falls. Another recital of personal experience is "Extracts From the Diary of John R. Thompson," compiled by Elizabeth Stoddard. The poems are "Moods," by Frank Dempster Sherman, "In the Window Seat," by Charles Washington Coleman, Jr., and "The Blue Flower," by Wilson K. Welsh.

The most conspicuous illustrated contribution in the November St. Nicolas (The Century Co., New York) is an article on "The Queen's Navy" by Lieut. F. Harrison Smith, R. N. It describes Portsmouth tells how war ships are placed in commission, and gives an account of the Jubilee Review of the Royal Navy by Queen Victoria. The illustrations a view of the harbor mouth at Portsmouth, a picture of the Victory's anchor monument to Lord Nelson's flagship, the Victory, the ironclad Agincourt, the royal yacht Victoria and Arthur, an Indian troop-ship, the procession of royal yachts reviewing the fleet, the war-ship Inflexible, a torpedo boat and an armored cruiser. An article on wood carving by John Todd Hill, is very well illustrated. Among the stories one by John J. a Becket entitled "The Carving of the Sallyport" is particularly interesting.

We are in receipt of the latest of the mechanical issues of the Practical Publishing Co., 21 Park Row, N. Y. The title of the work is "Grimshaw's Boiler Catechism," and we are inclined to think it the best of the series. It contains over 400 pages of text and engravings, and is worth all of its cost of \$2. The whole work is in the form of questions which daily occur to both the inexperienced and the expert, and these questions are fully answered. There are probably not less than a thousand questions replied to. This is a good and useful book for the engineer to have, and considering its size and completeness, is the cheapest technical work we have ever seen. It will be sent post paid to any address on receipt of the price. To show the style of the book, we may mention that there are 28 pages of index.

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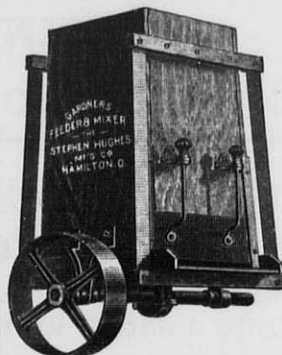
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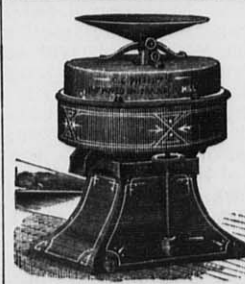
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MILWAUKEE ITEMS.

ALBERT TROESTEL, owner of the Phoenix Tannery is about to build another one on North Water st., to cost about \$25,000.

OTTO ZWEITUSCH has been sued by Europe an parties for an accounting for royalties on some valuable brewing patents. Geo. Bartholomae, of the Bartholomae & Licht Brewing Co. of Chicago and the Consolidated Bunting Apparatus Co. of New York, are also interested. The European interests are represented by Messrs. Cotzhausen, Sylvester & Scheiber of Milwaukee as counsel and Messrs. Gregory, Booth & Harlan of Chicago as solicitors.

ERNST VILTER's estate (of the firm of Weisel & Vilter, builders of steam engines, etc., is shown by the inventory filed in the probate court to be \$47,470.37 personal property and \$53,882.38 real estate. Mr. Vilter was a very hard-working man and his too close application to business no doubt shortened his days. This is too often the case with business men in the United States. They make business their pleasure and pleasure, business.

C. J. KERSHAW has been established in the grain elevator business at New Tacoma, W. T. The prospects of the enterprise are said to be bright. In spite of his colossal failure last year, Mr. Kershaw's host of friends will be glad to hear that he is in a fair way to get on his feet again.

AMERICAN CEREAL EXPORTS.

The *Financial Chronicle* presents the following comparisons of the wheat, flour and maize exports from the United States for a series of years, together with price of same:—

Year ended June 30.	QUANTITIES EXPORTED.			Average price per bush.		
	Wheat. bush.	Flour. brls.	Average. # bush.	Maize. bush.	Average. # bush.	cents.
1874.....	71,039,928	4,094,094	\$1.42	34,434,606	71	84
1875.....	53,047,177	3,973,128	1.12	28,858,470	67	58
1876.....	55,073,122	3,935,512	1.24	49,493,572	56	47
1877.....	40,325,611	3,843,665	1.16	70,860,983	54	55
1878.....	72,404,961	3,947,333	1.33	85,461,098	66	68
1879.....	122,353,936	5,623,714	1.06	86,296,252	61	54
1880.....	153,252,795	6,011,419	1.24	98,069,877	49	48
1881.....	150,565,477	7,945,786	1.11	91,908,175	48	55
1882.....	95,271,802	5,915,686	1.18	43,184,915	55	55
1883.....	106,385,828	9,205,664	1.12	40,586,825	68	68
1884.....	70,349,012	9,152,260	1.06	45,247,490	61	54
1885.....	84,653,714	10,648,145	.86	51,834,416	54	49
1886.....	57,759,209	8,179,241	.87	63,655,433	48	48
1887.....	101,971,949	11,518,449	.89	40,007,252	48	48
1888.....	63,846,204	11,746,028	.85	24,076,625	55	55

THE MANCHESTER SHIP CANAL.

The correspondent of the *Minneapolis Daily Tribune* writes to that paper as follows:

Nothing else at Manchester is more worthy the interested attention of the American vis-

THE HARTSFELT FURNACE CO.,

CINCINNATI, O.

Smelters and Refiners of Old Precious Metals,

AURIFEROUS AND ARGENTIFEROUS LEAD AND COPPER ORES,

CRYOLITE,

Concentrates, Jewelers' Sweepings, Dross, Refuse of White Lead, Paint Drippings, &c., &c,

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Catalogue of Improved Smelting and Precious Metal Saving Appliances (wet condensing process) sent free. Assaying and Analytical work in all its branches.

CORRESPONDENCE SOLICITED.

WORKS AT NEWPORT, KY.

IN OPERATION SINCE 1885.

10 Per Cent. Aluminum Alloy for Iron, Steel or Copper, 40 Cents per pound.
Large or Small Orders Promptly Attended to.

itor than the great ship canal that is now under construction and is to make Manchester an independent seaport. Let me remind the reader whose geographical memory is not good that Manchester lies directly inland from Liverpool, the distance being more than 30 miles. There is an ordinary canal from Manchester to Liverpool, which utilizes the Irwell and the Mersey rivers for a part of the way; but an ordinary English canal is much smaller even than those in America, and compares with a ship canal about as Bassett's creek compares with the Mississippi river at high water. The railroads, of course, long relegated this particular canal to obscurity. But Manchester, with its surrounding district is the largest consumer of American cotton, and the largest exporter of cotton cloth and machinery to all parts of the world; and the fact that Liverpool dock dues and transfer charges and the 30 miles of railroad freight charges amount to more than the total ocean freight charges has long vexed Manchester. The idea of a ship canal is an old one, but until lately it was deemed chimerical. The present company was formed three years ago, and it met with great opposition in securing its charter from parliament—Liverpool, the railroads and various property interests doing everything in their power to defeat the project. But Manchester won the day; and the work of excavation began in November, 1887. An army of men is at work all along the 35 miles of the route. The canal is to be as deep as the Suez, and about twice as wide. Its minimum depth of water will be 26 feet, and its width at water level will be 172 feet. Three years will yet be required to finish it, and the total cost, including lands purchased, etc., will approach \$40,000,000. The scheme of course includes very extensive dock facilities at Manchester, and, in fact, dockage all along the line, with suitable facilities at the ocean entrance on the Mersey estuary at Eastham, opposite Liverpool. Manchester is about 60 feet above sea level, and the canal will require a series of four locks which will, however occasion but very little delay to passing vessels. Vessels now have to wait for a favorable tide to get into the docks at Liverpool; and the entrance lock of the canal will have 10 feet advantage over the deepest of the Liverpool dock sills. It would be easy to give traffic figures showing the immense and varied benefits this canal must bring to Manchester and the region about it.

STALE BREAD IN NEW YORK.

Before the "September deal" stale bread was cheap, ranging from 2½ cents to 1 cent for a small loaf. The stuff sold at the latter price is more easily imagined and described. It is more than stale—it is moldy, decayed or full of insect life. On Mulberry street are three old women, bread peddlers, who employ a scrubbing brush, sand and water to remove the mold from their goods. Here the bread is contained in old gunny bags, which have been discarded in other trades and which reek with filth. They are placed directly on the sidewalk or, worse still, upon the damp and noisome steps which descend from the street to the vaults and cellars below. This variety of the staff of life is found in the Italian, Hungarian and Bohemian quarters; something a trifle superior obtains on the stands in the Russian, Polish and Roumanian districts. The best stale bread is sold by the great bakeries from the stock which is left on the shelves for twenty-four hours or more after baking.

The rise in the price of bread increased the demand for that which is stale. The hotels and restaurants which supply food peddlers raised their rates, the bakers followed example and the stale bread dealer was compelled to do likewise. Hardly a week had elapsed after the action of the bakers' trades unions before every peddler and standkeeper, as if by a preconcerted movement, raised the price of stale bread just a trifle more in proportion to value than was the increase in rate of fresh bread.

At a stand on Baxter street the dealer had made a specialty of 2 cent loaves and built up a large trade among the poor of that neighborhood. When he increased his price, a storm of indignation was aroused. At one time it looked as if he would be mobbed, but either quieter counsels or else the police prevailed and riotous spirit subsided. One of the women who was loud in her denunciation said: "My husband is a laborer who earns a dollar a day. We've got five children and have got to pay our rent. I've got only so much money to spend, and if you make me pay 3 cents a loaf I can't buy six loaves, but only four, and then me and the old man must suffer." Then came a burst of curses at the "American devils" who speculated in wheat, flour and human lives.—*Extract from a New York letter.*

THE JONATHAN MILLS MFG. CO.

MANUFACTURERS OF THE CELEBRATED

Jonathan Mills Universal Flour Dresser.

THE BEST BOLTING MACHINE IN THE WORLD. MORE THAN FIFTEEN HUNDRED NOW IN USE.

Our Revised Price List and other Information furnished on application.

BOLTING CLOTH

We carry a full line of *Heidegger & Co.'s* celebrated *Crown Silk Anchor Bolting Cloths* and *Grit Gauzes*. These cloths are famous the world over for their great strength and evenness of count. Also, *Superior Wire Scalping Cloths*.

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NEW SIZE OF PAGE, 15 x 21 INCHES.

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Descriptive circular, printed on one of the maps, worth 35 cents, sent free on application.

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THE "UNITED STATES MILLER" TO MAY, 1889, AND

50 Charming Complete Novels

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☞ ONE DOLLAR! ☞

To Foreign Countries \$2.00. (8 Shillings English.) Orders must be sent to us before Dec. 1, '88.

These Novels are printed in pamphlet form, on good paper. They would cost you in the form of "Seaside" or other libraries, \$10.00. If you do not want to read the books yourself, divide them up among your friends. The regular subscription price of the U. S. MILLER alone is \$1.00 per year, and it is worth the money. We have been able to make a good bargain with an Eastern publisher and propose to give our subscribers the benefit of it. The following is the list of novels:

A Battered Life. By MARGARET HARRISON.
An Old Man's Sacrifice. By MRS. ANN S. STEPHENS.
A Wicked Girl. By MARY CECIL HAY.
A Low Marriage. By MISS MULLOCK. Illustrated.
Under the Lilacs. By FLORENCE WARDEN.
The Strange Case of Dr. Jekyll and Mr. Hyde. By R. L. STEVENSON.
The Lawyer's Secret. By MISS M. E. BRADDON.
Fair but False. By the author of "Dora Thorne."
The Nine of Hearts. By R. L. FARJEON.
Dora's Fortune. By FLORENCE WARDEN.
A Playwright's Daughter. By MRS. ANNIE EDWARDS. Illustrated.
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The Poison of Asps. By FLORENCE MARRYAT.
Mont Grange. By MRS. HENRY WOOD.
Agatha's History. By MARGARET BLOUNT.
Out of the Sea. By CLARA AUGUSTA.
The Story of a Storm. By MRS. JANE G. AUSTIN.
The Evil Genius. By M. T. CALDER.
The Mystery at Blackwood Grange. By MAY AGNES FLEMING.
The Last of the Ruthvens. By MISS MULLOCK. Illustrated.
The Morwick Farm Mystery. By WILKIE COLLINS. Illustrated.
Out of the Depths. By HUGH CONWAY.
Retribution. By MARGARET BLOUNT.
A Tale of Iron. By MRS. HENRY WOOD.
A Fortune Hunter. By ANNIE THOMAS. Illustrated.
In Cupid's Net. By the author of "Dora Thorne."

Wedded and Parted. By the author of "Dora Thorne."
The Knightsbridge Mystery. By CHARLES READ.
Ingledew House. By the author of "Dora Thorne."
A Passive Crime. By "THE DUCHESS."
Rose Lodge. By MRS. HENRY WOOD.
A Bridge of Love. By the author of "Dora Thorne."
The Fatal Marriage. By MISS M. E. BRADDON.
A Queen Amongst Women. By the author of "Dora Thorne."
The Blatchford Bequest. By HUGH CONWAY.
The Curse of Carew. By the author of "Dora Thorne."
A Shadow on the Threshold. By MARY CECIL HAY.
The Fatal Little. By the author of "Dora Thorne."
Carrington's Gift. By HUGH CONWAY. Illustrated.
More Bitter than Death. By the author of "Dora Thorne."
Missor Mrs. By WILKIE COLLINS. Illustrated.
In the Holidays. By MARY CECIL HAY.
The Romantic Adventures of a Milkmaid. By THOMAS HARDY.
A Dead Heart. By the author of "Dora Thorne."
Dark Days. By HUGH CONWAY.
Shadows on the Snow. By R. L. FARJEON.
At the World's Mercy. By FLORENCE WARDEN.
Called Back. By HUGH CONWAY.
Mildred Trevanion. By "THE DUCHESS."
The Grey Woman. By MRS. GASKELL. Illustrated.

Fill out the blank below, enclose \$1.00 and address plainly to

E. HARRISON CAWKER,

Publisher of the "United States Miller," Milwaukee, Wis.

\$1.00.

1888.

Publisher UNITED STATES MILLER, Milwaukee, Wis.

Send the UNITED STATES MILLER for one year and 50 Novels, post paid, for which find enclosed One Dollar.

Name.....

Post Office.....

County..... State.....

[Would be pleased also to have you mention any particulars about your mill or elevator, capacity Power, system, etc., and the name of Head Miller.]

STEAM BOILER INSPECTION IN FRANCE.

No steam engine or boiler can be put into service in France without a previous authorization by the administrative authority. All boilers and steam cylinders, or any other apparatus that is liable to burst under pressure, must be tested in the shops of the builder. The tests are made cold and with hydraulic pressure.

The testing pressure is equal to a certain number of times the normal effective pressure under which the boiler or apparatus is to work. It is, save in exceptional cases, three times for boilers of plate iron or copper, and even five times for boilers of cast iron. The triple pressure to which the iron plate boilers are subjected, results in making them much heavier than those we are accustomed to use. An exception is, however, sometimes made in favor of boilers which are worked at or just above the atmospheric pressure, for if they present a sufficiently sound appearance and appear to be well and strongly made, they are not tested at all.

If the boiler passes the preliminary examination it is no sign that the work is done. For it must be repeated after the boiler is in place if the chief engineer demands it, or if it has undergone any important modifications.

Steam engines are also under surveillance of the local Board of police, which is presided over by the department engineer; and a visit of inspection must be paid at least once a year.

According to the law, any builder who may sell a boiler or any other steam apparatus, that has not been tested, is liable to a fine of twenty-five to one thousand francs, according to the circumstances of the case. The owner also is liable to a fine and imprisonment, if he uses any unauthorized apparatus or machinery that has not been tested since it was repaired; also for using a condemned appliance, or one that is not constructed in accordance with the prescribed rules; and finally he must not use any apparatus, whether inspected and accepted or not, without a permit.

LUBRICATING.

Without doubt the most economical way of lubricating shafting is by means of a box which has a reservoir attached to the under side of it, and by a wick feed, the oil is carried up to the shaft, and from thence falls back into the reservoir again, for a pint of oil, costing 75 cents per gallon, will last at least six months on an ordinary line or main shafting, and in some cases much longer, but if the shaft is fitted with a box that has a large slot in the cap, and no reservoir underneath, it is often a good plan to use some good grease, of a proper consistency, that it may not feed too fast or too slow. I have a shaft running 200 revolutions per minute, carrying pulley four feet six inches in diameter, on which an 18-inch double leather belt is run, and the bearing nearest this pulley requires only about 10 cents worth of grease for a sum of eight months. Nevertheless, I believe that a factory can be run with less cost for power where oil is used in properly constructed boxes than with any kind of prepared grease, and tallow is much worse in this respect in cold weather. — W. H. Wakeman, in *Manufacturers' Gazette*.

A GREAT MAGAZINE.

The Century for 1889.



THE question has often been asked, "to what does *The Century* owe its great circulation?" *The Christian Union* once answered this by the statement that "it has been fairly won, not by advertising schemes, but by the excellence which characterizes it in every department." In their announcements for the coming year the publishers state that it has always been their desire to make *The Century* the one in dispensable periodical of its class, so that whatever other publication might be desirable in the family, *The Century* could not be neglected by those who wish to keep abreast of the times in all matters pertaining to culture. And the unprecedented circulation of the magazine would seem to be the response of the public to this intention.

With the November number *The Century* begins its thirty-seventh volume. Two great features of the magazine which are to continue throughout the new volume are already well known to the public, the Lincoln history and the papers on "Siberia and the Exile System." The first of these, written by Messrs. Nicolay and Hay, President Lincoln's private secretaries, contains the inside history of the dark days of the war, as seen from the White House.



THE SIBERIAN PAPERS, by George Kennan, are attracting the attention of the civilized world. The *Chicago Tribune* says that "no other magazine articles printed in the English language just now touch upon a subject which so vitally interests all thoughtful people in Europe and America and Asia." As is already known, copies of *The Century* entering Russia have these articles torn out by the customs officials on the frontier.

DURING 1889 *The Century* will publish the most important art feature that has yet found place in its pages. It is the result of four years' work of Mr. Timothy Cole, the leading magazine engraver of the world, in the galleries of Europe, engraving from the originals the greatest pictures by the old masters. A series of papers on Ireland, its customs, landscapes, etc., will appear, and there are to be illustrated articles on Bible scenes, treating especially the subjects of the International Sunday-School Lessons. George W. Cable will write "Strange, True Stories of Louisiana." There will be novelettes and short stories by leading writers, occasional articles on war subjects (supplemental to the famous "War Papers" by General Grant and others, which have been appearing in *The Century*), etc., etc.

The Century costs four dollars a year, and it is published by The Century Co., of New York, who will send a copy of the full prospectus to any one on request.

ABOUT forty members of the Central Illinois Millers' Association, met at Springfield, Ill., Nov. 20, and determined to use the machinery of their organization to prevent the shipment of flour from outside States, into their territory in under-weight packages, a practice which they maintain is ruining their local trade.

FOR CHILDREN OF ALL AGES.

St. Nicholas for 1889



PEOPLE who have the idea that *St. Nicholas Magazine* is only for little children should look over the prospectus of that magazine for 1889, and they will discover that it is for children of all ages, "from five to eighty-five," as some one recently said of it. Indeed, while *St. Nicholas* is designed for girls and boys, it might almost be called a "family magazine," for the grown-up members of a household will find much to interest them in every number.

The editor, Mrs. Mary Mapes Dodge, calls the next volume an "all-round-the-world year," because it is to contain so many illustrated papers about the world in general—not dry geographical papers, but stories and sketches and tales of travel and adventure by land and sea—and all illustrated by the best artists. The features will include a serial story, "How We Made the Farthest North," by Gen. A. W. Greely, the well-known commander of the Greely Expedition; a serial about Canada, by Mrs. Catherwood, who is writing a serial story for *The Century* this year; "Indians of the Amazon," by Mrs. Frank R. Stockton. There are many papers about Europe, including a Christmas story of life in Norway, by H. H. Boyesen; articles on Holland and the Dutch, by Mrs. Mary Mapes Dodge; "The Queen's Navy," by Lieut. F. Harrison Smith, R. N., with illustrations of many of England's finest war ships; "The Winchester School," illustrated by Joseph Pennell; "English Railway Trains," by Wm. H. Rideing, etc., etc. The French papers include "Ferdinand de Lesseps and his two Ship Canals," and there are several interesting contributions on German, Italian and Russian subjects.



Under "Asia," comes "Boys and Girls in China," by Yan Phou Lee (a recent graduate of Yale); "Home Life in the East," by Mrs. Holman Hunt, and a number of papers about Japan. Under "Africa" there is a sketch of Henry M. Stanley, by Noah Brooks, and several stories about Egypt. Australia is not forgotten, nor the islands of the sea, and there are even to be stories of under the sea.

Of course the bulk of the contents will relate to American subjects, as usual. Mrs. Burnett, the author of "Little Lord Fauntleroy," contributes a story of New York called "Little Saint Elizabeth;" there will be papers describing how the government offices are conducted, papers about athletics, amateur photography, etc. The full prospectus will be sent to any one who wishes to see it by the publishers, The Century Co., of New York.

The *Graphic* recently said of *St. Nicholas*, "be family without it is only half-blessed."

THE Brussels Exhibition has come to a close. The only exhibit of flour milling machinery from the United States was a full line of grain cleaning machinery from S. Howes of Silver Creek, N. Y. Seck Bros. and Israel Bros., of Dresden, Germany, had full lines of machines on exhibition. The Budapest flour mills had a fine display of flour.

HEAD millers in mills having a capacity of 150 bbls. or more will find it to their advantage to send us their addresses with name of firm employing them, etc.

1888.

CAWKER'S

1888.

AMERICAN FLOUR MILL AND ELEVATOR DIRECTORY.

* FOR 1888 (COPYRIGHTED) *

Is now READY FOR DELIVERY. This Directory is far more complete than any of the five preceding ones. Our long experience has taught us the wants of the trade, and we have used our best endeavors to meet them. The principal features are as follows:

- 1.—List of Flour Mill owners of the United States and Dominion of Canada, with Post Office address, County and State, and when information is obtained, the capacity in barrels of flour per day of 24 hours, kind of power used (steam or water), roller or stone system.
- 2.—Lists of Corn, Oatmeal, Rice, Feed Mills, etc.
- 3.—List of Grain Elevators and Warehouses.
- 4.—List of Millwrights.
- 5.—List of prominent American Flour and Grain Brokers.
- 6.—List of Foreign Flour and Grain Importers.
- 7.—List of Mill Furnishers, etc.
- 8.—Statistics valuable to the Trade.
- 9.—Millers whom we believe to be worth Ten Thousand Dollars or more are indicated.

This directory gives the address of 16,062 Flour Mills in the United States and 1,634 in the Dominion of Canada. The additional lists of Feed, Corn, Barley, Oatmeal and Rice Mills, Elevators and Warehouses, Millwrights, Flour and Grain Brokers, Importers, etc., adds to the number of addresses several thousand. The COUNTIES are included in the address, and in cities, the street and number in most instances. We have had valuable aid in compiling this work from Secretaries of Boards of Trade, of Bureaus of Labor Statistics and Manufactures, from Railroad and Steamship Companies, from the milling and commercial press generally, and from mill and grain elevator owners themselves. That the work is perfect, we do not claim, for in the nature of things that is an impossibility, but as it is, it is indispensable to all desiring to reach the flour and grain trade of this country, and is well worth the price asked. The total number of addresses contained in this volume is 22,827.

Price of Directory, \$10 per copy, post paid, to any address.

If desired Directory will be sent by express C. O. D. Remit by Express or by Exchange on New York, Chicago or Milwaukee, or Post Office or Express Money Order. Address,

E. HARRISON CAWKER, PUBLISHER,

No. 124 Grand Avenue,

MILWAUKEE, WIS.

1888 Edition, just out, March 1, 1888, revised, amended and added to, to meet all the requirements suggested by the members of the Millers' National Association, who use more copies of this Code, than of all others combined.

PRIVATE TELEGRAPHIC CIPHER

CODE

COMPILED EXPRESSLY FOR THE USE OF

Millers, Flour and Grain Brokers,

For Private Telegraphic Correspondence, either
for Land or Cable Lines.

This CODE has been approved and is used by the best firms in America and Europe. It contains Flour Tables, Bran Tables, Middlings Tables, Flour Grades and Brands, Time of Shipment, Dates, Names of Places, American Currency, Sterling Quotations, Table on Limits, etc., Drawing, Credits, etc., and Shipments on Joint Account, Miscellaneous and Market Upwards, Market Downwards, Insurance, Shipping and Freight, Shipping by Regular Lines of Steamers, Finance, Bankers' Names, Standing of Firms, Telegraphing, Advances, Commission, Stock and Crops, Weather, Samples and Quality, Equivalent of Sacks in Barrel Quantities, Commission Tables, Interest Tables, Equivalent Flour Prices in Currency, Sterling, Francs, Guilders, and Marks, Comparative Tables, Sack and Barrel Flour, Ocean Freight Rates (Comparative Table), Sailings from Seaboard (Table), Key to Sailings from Seaboard Table, Foreign Weights and Measures, etc.

We respectfully refer to the following well-known firms: S. H. Seamans (Empire Mills), Sec'y of the Millers' National Association; E. Sanderson & Co. (Phoenix Mills), Milwaukee, Wis.; Daisy Roller Mills, Milwaukee, Wis.; Nunnenmacher & Co. (Star Mills), Milwaukee, Wis.; Roots & Co. (Millers), Cincinnati, O.; C. H. Seybt, (Miller), Highland, Ill.; Kosmack & Co. (Flour Brokers), Glasgow, Scotland; J. F. Imbs & Co. (Millers), St. Louis, Mo.; E. Schraudenbach, Okauchee Roller Mills, Wis.; Winona Mill Co., Winona, Minn.; Herriek, Kirk & Co. New York; Acme Milling Co., Indianapolis, Ind.; W. H. Jones, New Brighton, Eng.; Chas. Kreuztizer, Heidelberg; Wm.

Paddock & Co., Terre Haute, Ind.; Mandon Roller Mill Co.; L. R. Finch's Sons, New York; Jupiter Mills, Milwaukee; Morse & Sammis, Minneapolis, Minn.; Faust, Kraus & Co., Milwaukee; American Starch Co., Columbus, Ind.; Rudolph & Herne, Liverpool, Eng.; Cleveland Milling Co., Cleveland, O.; Zinkelsen B. & Co.; Abion Milling Co., Indianapolis; Norton Milling Co., Chicago; Norris & Caruthers, Montreal; Nelson Milling Co., Evansville; Valier & Spies Milling Co., Marine, Ill.; J. S. Hillyer; Gilchrist & Bros., Glasgow, Scotland; David Wright, Chicago; Crain & Baird, Montreal; H. D. Porteous & Co., Liverpool, Eng.; Aultman & Taylor Co.; John H. Peacock, Minneapolis, Minn.; Eckhardt & Swan, Chicago; E. W. Seybt, Highland, Albion Milling Co., Mich.; F. W. Huber Co., Chicago; Spink Bros., Toronto, Can.; Mr. Le Duc, City; Chas. Tiedeman, O'Fallon, Ill.; Hurins, Sons & Co., Cincinnati, O.; G. Montague & Co., Chicago; Phoenix Mill Co., Davenport, Ia.; Blanton, Watson & Co., Indianapolis, Ind.; Porter Milling Co., Winona, T. & A. B. Snider, German Mills, Ont.; Jenks & Mering; Richardson & Evans; Sidle, Fletcher & Co.; Comstock & Co.; I. T. Bronson; Manegold & Son; Farquhar Bros.; Central Milling Co.; Watston & Farr; Globe Milling Co.; Geo. Teleton & Co.; L. Hurd; N. W. Miller; Wright & Hardie; Tolleson, Com. Co., Atlanta; Yaeger Flour Mill Co.; Thos. Todd & Son; Ripon Roller Mills; Schoellkopf & Matthews; W. Trow & Co.; St. Paul Roller Mill Co.; and many others.

ADDRESS

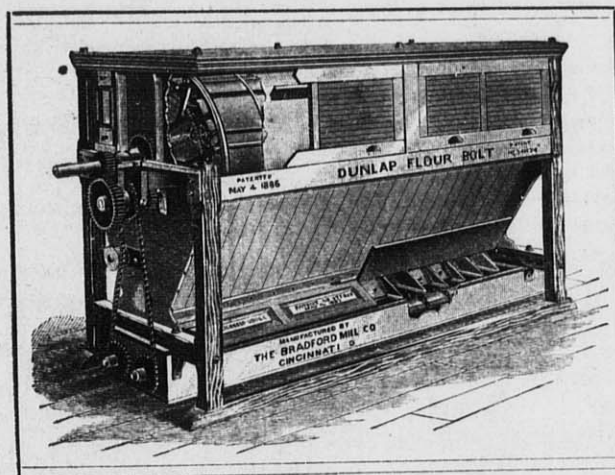
THE RIVERSIDE PRINTING CO.,

124 GRAND AVENUE,

MILWAUKEE, WIS., U. S. A.

THE DUNLAP * BOLT

"A Great Acquisition to Milling."



The New 1500-Barrel Mill on Staten Island, N. Y.,
will have 52 of these Reels to do all its Bolting.

HUNGARIAN ROLLER MILL CO.,

BLOOMINGTON, ILLS., September 14th, 1888.

THE BRADFORD MILL CO., Cincinnati, Ohio.

GENTLEMEN: I have had your DUNLAP REEL in operation about 15 days and nights, and on new wheat which was very soft, and it has accomplished its work admirably; greatly exceeded my expectations. I have operated quite a variety of Reels, but have to say the DUNLAP surpasses any I have ever seen or used.

It gives me pleasure to state that its work has given entire satisfaction, and moreover, am surprised at its close separation, capacity and light running. The Dunlap Reel can certainly be considered a great acquisition to milling.

I to-day forward you, per mail, samples of material upon which your Reel is working.

Yours truly,

A. G. BEOBOLD,
Head Miller Hungarian Roller Mill Co.

THE BRADFORD MILL CO.

CINCINNATI, OHIO.

BODMER BOLTING CLOTH

* — CELEBRATED FOR — *

STRENGTH, DURABILITY AND EVENNESS OF MESH.

THIS CLOTH HAS STOOD THE TEST OF YEARS AND HAS NEVER FAILED TO GIVE SATISFACTION.
ONCE USED NO OTHER BRAND WILL BE ACCEPTED.

CLOTHS MADE IN A PERFECT MANNER AND SURE FIT GUARANTEED. WE HAVE BEEN APPOINTED SOLE AGENTS IN
CHICAGO FOR THE BODMER BOLTING CLOTH. WRITE FOR DISCOUNTS, ETC.

179 PARK AVENUE, **RYER & CO.,** CHICAGO, ILL.

STILL ON TOP.



Perhaps the highest compliment that could be paid the "SALEM" Bucket, is the fact that, during the past few years, its shape has been so closely imitated by other manufacturers, as to infringe our patented rights; but experience reveals the imperfections of imitations, and, we therefore, take it as a further compliment to the "SALEM" Bucket, that some of its old patrons who were induced to try the imitations, have now returned to the Salem Bucket, thereby acknowledging it to be the most satisfactory. Don't be deceived by other makes of Buckets that are claimed to be "just as good." Insist upon having the ORIGINAL AND RELIABLE

"SALEM" BUCKET.

All legitimate "Salem" Buckets are plainly marked with the word "SALEM."

W. J. CLARK & CO., Sole Manufacturers, - SALEM, OHIO.

THORNBURGH & GLESSNER, Gen'l Agents, CHICAGO.

The Superlative Purifier.

A REVOLUTION IN MILLING!

The Superlative Bran Duster.

NEW ERA SCALPER

No Scouring

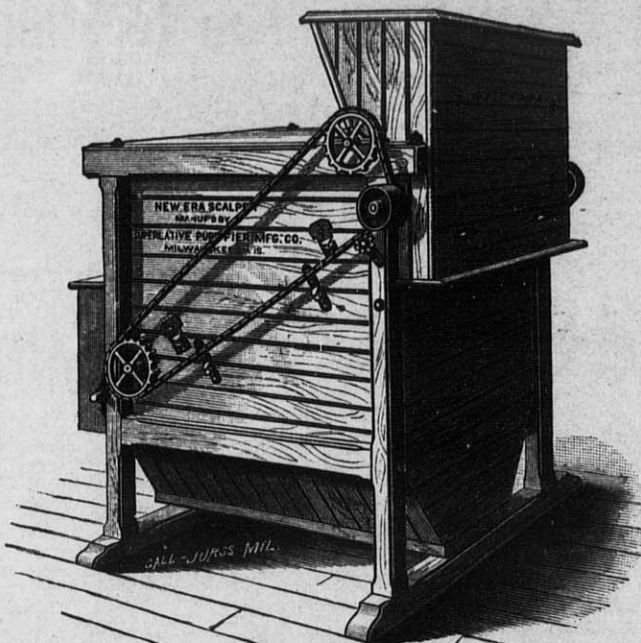
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BRAN OR MIDDINGS.

SMALL SPACE

One Machine will do all the Scalping
in a 75-barrel Mill.

NO CLOGGING OF CLOTH.



Break Flour

- AS -

White as any in the Mill.

Immense Capacity.

One Machine will do the Scalping for
one break in a 500-barrel Mill.

SUPERLATIVE PURIFIER M'FG CO., Milwaukee, Wis.

Gentlemen: * * * I tell you, the machine is a daisy Scalper. Too much praise cannot be said for it. It increases our High Patent and our Bakers' Flour is so much less, and of better color and more granular, there being less wearing and scouring of the product through the scalping process.

Yours very truly,

Sheldon, Iowa, June 13, 1888.

BONUS & LOGAN.

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The Superlative Bran Duster.

Superlative Purifier Mfg. Co., Milwaukee, Wis.

The Superlative Purifier.

G. M. MANN.

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Successors to H. P. LEAVENS & CO.

MANUFACTURERS OF

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